U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-317/92-26
50-318/92-26

Docket Nos 50-317 and 50-318

License Nos. DPR-53 and DPR-69

Licensee: Baltimore Gas and Electric Company (BG&E)
Post Office Box 1475
Baltimore, Maryland 21203

Facility Name: Calvert Cliffs Nuclear Power Plant Units 1 and 2

Inspection At: Calvert Cliffs Site and the Fossil Engineering Department (FED)

Inspection Conducted: September 21 -25, 1992

Inspector: Laurie Peluso 10/09/92
Laurie Peluso, Radiation Specialist Date
Effluents Radiation Protection Section (ERPS)
Facilities Radiological Safety and
Safeguards Branch (FRSSB)

Approved by: Marie Miller 10-9-92
Marie T. Miller, Chief, ERPS, FRSSB, Date
Division of Radiation Safety and Safeguards (DRSS)

Areas Inspected: Announced safety inspection of the Radiological Environmental Monitoring Program (REMP) including: management controls, quality assurance audits, quality control program for analytical measurements, meteorological monitoring program, and implementation of the above programs and the Off ite Dose Calculation Manual (ODCM).

Results: Within the areas inspected, implementation of the REMP was excellent. No safety concerns or violations of regulatory requirements were identified.

DETAILS

1.0 Individuals Contacted

1.1 Principal Licensee Employees

Calvert Cliffs Site Units 1 and 2

* R. Conatser, Chemist, Chemistry Programs Unit
* P. Crinigan, General Supervisor, Chemistry
* S. Hillier, System Engineer, Plant Engineering
* D. Mitchell, Supervisor, Computer Maintenance Unit
* E. Wilson, Compliance Engineer
* J. Wood, Quality Assurance Unit

Fossil Engineering Department

* L. Bartal, Ph.D., Senior Chemist, Chemistry Unit, Technical Services Section (TSS)
* E. Bauereis, Ph.D., Director, Environmental Programs Section (EPS)
  H. Fultz, Laboratory Technician, Chemistry Unit, TSS
* B. Helbing, Engineering Technician, Water & Air Quality Unit, EPS
* M. C. Key, Engineer, Water & Air Quality Unit, EPS
* K. Kraus, Chemist, Chemistry Unit, TSS
  C. Kurlick, Laboratory Technician, Chemistry Unit, TSS
* T. Ringger, Supervisor, Water & Air Quality Unit, EPS

Nuclear Regulatory Commission (NRC)

* F. Lyon, Resident Inspector
* P. Wilson, Senior Resident Inspector

* Denotes those individuals present at exit interview on September 25, 1992.

Other licensee personnel were also contacted or interviewed during this inspection.

2.0 Purpose

The purpose of this inspection was to verify the licensee's capability to implement the Radiological Environmental Monitoring Program (REMP) and the Meteorological Monitoring Program (MMP) according to Technical Specifications (TS), the Offsite Dose Calculation Manual (ODCM), and appropriate procedures during normal and emergency operations.

3.0 Management Controls

3.1 Organization

The inspector reviewed the organization and administration of the REMP and discussed with the licensee any changes since the previous inspection conducted in October 1991. There have been changes in the organization since the previous inspection. The Electric Test Department was renamed as Chemistry Unit, Technical Services Section. The Chemistry Unit and the Water & Air Quality Unit (W&AQ) which are both under the Fossil Engineering Department, Baltimore, MD, maintain responsibility for the REMP. The Chemistry Unit supports the W&AQ Unit by functioning as a contractor obtaining environmental samples, performing the appropriate analyses, maintaining records of the results, and conducting a quality assurance/quality control program. The W&AQ has oversight of these responsibilities and performs other duties such as conducting the Land Use Census and preparing the Annual REMP Report. In January 1992, complete responsibility for the Meteorological Monitoring Program had been transferred from the Chemistry Unit to the Electric and Controls Maintenance Section/Computer Maintenance Unit at the Calvert Cliffs site.

Based on direct observation and discussions with the licensee, the inspector noted that the changes have had no adverse effect on the licensee's ability to implement the REMP and determined that the effectiveness and quality of oversight and staffing was very good.

3.2 Quality Assurance Audits

The inspector reviewed Quality Assurance Audit Report 92-17, "Radiological Effluent Tech Specs", July 31, 1992. The audit was conducted by the Quality Audits Unit during May 15 - July 1, 1992. The areas audited included the REMP, ODCM, Radioactive Effluent Technical Specifications (RETS), and Process Control Program (PCP). The audit covered the stated objectives, utilized a technical specialist, and was thorough and of sufficient technical depth to assess these programs. The inspector noted that the audit identified two findings and seven recommendations. The inspector discussed the findings and recommendations with the licensee and determined that the findings and recommendations were assigned to the appropriate department for resolution. The responses were timely and appropriate. The inspector also reviewed the audit plan and schedule and noted that they were appropriate for REMP audits.

3.3 Annual Radiological Environmental Monitoring Program Report

The inspector reviewed the Annual REMP Report for 1991, as well as the available 1992 analytical data and the Land Use Census for the REMP. The report provided a comprehensive summary of the analytical results of the REMP around the Calvert Cliffs site and met the TS reporting requirements. The reviewed results indicated that all samples were collected as required and the analytical data for 1991 and 1992 indicated no obvious omissions or anomalous data.

4.0 Radiological Environmental Monitoring Program

4.1 Direct Observations

The inspector examined selected sampling stations to determine whether samples were being obtained from the locations designated in the TS and the ODCM and whether air samplers were operable and calibrated. These sampling stations included air samplers for particulates and airborne iodines, the composite water sampling station at the intake and discharge locations, several gardens, and a number of thermoluminescent dosimeter (TLD) stations for measurement of direct ambient radiation. The selected air sampling equipment was operational, well maintained, and calibrated at the time of the inspection. One composite water sampler was not operating at the time of the inspection. This unit was out of service for approximately one day which would not negatively affect sample quality. The licensee placed the unit back in service during this inspection. Vegetation samples were available at the locations specified in the ODCM. The TLDs were placed at the designated locations as specified in the ODCM.

The inspector noted that the licensee, in addition to the required monitoring, had in place environmental sampling stations such as TLDs, air samplers, and pressurized ion chambers (PIC) at various locations around the plant site and around the site of the Interim Spent Fuel Storage Facility (ISFSF). The PICs are collocated with the TLDs and air samplers at the ISFSF and serve as a baseline of environmental conditions around the storage facility. The inspector reviewed selected monitoring results for this area and noted that the results reflected expected background levels.

4.2 Review of the REMP Procedures

The inspector reviewed the licensee's procedure manual as part of the evaluation of the implementation of the REMP in accordance with TS and the ODCM. The manual included sampling and analytical procedures, and instrumentation calibration procedures. The reviewed procedures were

detailed, concise, and provided the required direction and guidance for implementing an effective program. The inspector noted that the licensee reviews and revises the procedures each year to reflect organizational and program changes.

The inspector also reviewed the calibration results of the low volume air samplers. The calibrations were performed as scheduled and results were within the licensee's acceptance criteria.

Based on the above review and discussions with the licensee representatives, the inspector determined that the licensee had implemented an excellent REMP.

5.0 Quality Assurance/Quality Control for Analytical Measurements

The inspector reviewed the licensee's program for quality assurance (QA) to determine whether the licensee had adequate control with respect to sampling, analyzing samples and evaluating data for the implementation of the REMP. The QA program for analysis of environmental samples is conducted by the Chemistry Unit, FED. The licensee participates in the EPA-cross check program and conducts a split sample program to verify the quality of laboratory analyses. The inspector reviewed the results and noted that the comparisons were in very good agreement with few exceptions. The licensee addressed and resolved the exceptions in a timely manner. The inspector reviewed the quality control charts and data for the liquid scintillation counters, gamma spectrometry systems, and the proportional counters. The inspector also noted that the licensee's initiative to independently visit the contractor laboratory, Teledyne Isotope, Inc., of Westwood, New Jersey was very good. This provided members of the Chemistry Unit an opportunity to tour the facilities and discuss certain disagreements in QA analysis results. During the visit, the licensee determined the causes of the nonconformances and was satisfied with the responses. The licensee also determined that the laboratory continues to meet the licensee's quality assurance program requirements.

Based on the above reviews and discussions with the licensee, the inspector determined that the licensee had an excellent quality control program.

6.0 Meteorological Monitoring Program

The inspector reviewed the licensee's meteorological monitoring program to determine whether the instrumentation and equipment were operable, calibrated and maintained. The inspector reviewed several calibration procedures and the most recent calibration results for the meteorological parameters (wind speed, wind direction, and delta temperature) at the primary and back-up meteorological towers. Calibrations were performed semiannually by the Computer Maintenance Unit

according to the Surveillance Test Procedure STP-M-461-0, "Meteorological Calibration." All reviewed calibration results were within the licensee's acceptance criteria. At the time of the inspection the inspector noted that the Data Recording Display Terminal is the primary method to access meteorological data. Each meteorological parameter is interrogated every ten seconds, and fifteen minute and hourly averages are calculated and stored. The strip chart recorders are the secondary method. The read-out from the strip charts are digitized to provide backup data.

On July 31, 1992, the primary meteorological tower had been struck by lightning. The inspector discussed with the licensee the corrective actions taken to identify the problem and restore any affected instrumentation related to the primary meteorological tower to service. In addition, the inspector reviewed maintenance orders relative to this incident and noted that the licensee returned the failed components and the meteorological tower back to service in five days. The inspector also noted that the licensee has been making an effort to upgrade and maintain equipment and place an equipment building at the primary tower location to house the meteorological equipment.

Based on the above record review and discussions with the licensee personnel, the inspector determined that the licensee has implemented the MMP effectively.

7.0 Exit Interview

The inspector met with the licensee representatives denoted in Section 1.1 of this inspection report at the conclusion of the inspection on September 25, 1992. The inspector summarized the purpose, scope, and findings of the inspection.